

WHAT IS CLAIMED:

1           1. A first glass matrix composition  
2 consisting essentially by mol percent of about:  
3           55 <  $\text{SiO}_2$  < 75;  
4           5 < BaO < 30; and  
5           2 < MgO < 22.

1           2. The first glass matrix composition of  
2 claim 1, consisting essentially by mol percent of about:  
3           60 <  $\text{SiO}_2$  < 75;  
4           15 < BaO < 30; and  
5           7.5 < MgO < 12.5, to form a second glass matrix  
6 composition.

1           3. A third glass matrix-ceramic particulate  
2 composite consisting essentially by mol percent of about:  
3           55 <  $\text{SiO}_2$  < 65;  
4           5 < BaO < 15;  
5           25 < MgO < 35; and  
6           a forsterite phase consisting of  $\text{Mg}_2\text{SiO}_4$ .

1           4. The glass matrix-ceramic particulate  
2 composite of claim 3, consisting essentially by mol  
3 percent of about:  
4           57 <  $\text{SiO}_2$  < 63;  
5           7 < BaO < 13;  
6           27 < MgO < 33; and  
7           a forsterite phase consisting of  $\text{Mg}_2\text{SiO}_4$ .

09763343.120100

1           5.    The glass matrix composition of claim 1,  
2   consisting essentially by mol percent of about:

3           55 < SiO<sub>2</sub> < 75;  
4           5 < (BaO + SrO) < 30; and  
5           2 < MgO < 22.

1           6.    The glass matrix-ceramic particulate  
2   composite of claim 3, consisting essentially by mol  
3   percent of about:

4           55 < SiO<sub>2</sub> < 65;  
5           5 < (BaO + SrO) < 15; and  
6           25 < MgO < 35.

1           7.    A method of making a glass matrix-ceramic  
2   particulate third composite comprising the steps of:

3           (a)   providing as a matrix glass, a finely  
4   divided glass powder of the glass in the composition  
5   range defined by claim 1;

6           (b)   providing as a particulate phase, a finely  
7   divided powder selected from the group consisting of a  
8   high expansion ceramic, a metal, and mixtures thereof;

9           (c)   intermixing the matrix glass with the  
10   particulate phase in an organic vehicle; and

11          (d)   firing the intermixed materials to a  
12   sealing temperature from 1100 to 1250°C.

1           8.    The method of claim 7, wherein the  
2   particulate phase comprises a ceramic particulate.

1           9.    The method of claim 8, wherein the  
2   ceramic particulate comprises a forsterite phase  
3   consisting of Mg<sub>2</sub>SiO<sub>4</sub>.

1           10. The method of claim 7, wherein the step of  
2 providing a particulate phase comprises the step of  
3 providing a finely divided powder of a high expansion  
4 metal to form an interconnecting and current collecting  
5 material.

1           11. The method of claim 10, wherein the step  
2 of providing a finely divided powder comprises providing  
3 silver.

1           12. The method of claim 10, wherein the step  
2 of providing a finely divided powder comprises providing  
3 ferritic stainless steel.